

IN THE CLAIMS:

Please cancel claims 1 and 14 without prejudice and amend the claims as follows:

1. (Cancelled)

2. (Currently Amended) The method of claim [[1]] 3, wherein the second mode has been generated by partial mode conversion of the first mode at a boundary face of a layer of the earth.

3. (Currently Amended) A method of processing seismic data including corresponding first and second modes of seismic energy, comprising:

a) processing a trace indicative of a first parameter of the seismic data acquired at a first receiver including at least events corresponding to the first mode with a trace indicative of a second parameter of the seismic data acquired at the first receiver including at least events corresponding to the second mode;

b) identifying an event in the processed data corresponding to partial mode conversion; and

c) obtaining information from the amplitude and/or the waveform of the event in the processed data corresponding to partial mode conversion. The method of claim 1, wherein step (c) comprises normalizing the amplitude in the processed data of the event corresponding to partial mode conversion.

4. (Currently Amended) The method of claim 3 A method of processing seismic data including corresponding first and second modes of seismic energy, comprising:

a) processing a trace indicative of a first parameter of the seismic data acquired at a first receiver including at least events corresponding to the first mode with a trace indicative of a second parameter of the seismic data acquired at the first receiver including at least events corresponding to the second mode;

b) identifying an event in the processed data corresponding to partial mode conversion; and

c) obtaining information from the amplitude and/or the waveform of the event in the processed data corresponding to partial mode conversion, wherein step (c) comprises normalizing the amplitude in the processed data of the event corresponding to partial mode conversion relative to the amplitude of the processed data at zero time delay.

5. (Previously Presented) The method of claim 3, comprising the further step of normalizing the trace indicative of the second parameter relative to the normalized amplitude of the event corresponding to partial mode conversion.

6. (Currently Amended) The method of claim [[1]] 3, comprising the further step of repeating steps (a), (b) and (c) for seismic data acquired at a second receiver, the second receiver not being co-located with the first receiver.

7. (Currently Amended) The method of claim [[1]] 3, wherein the first parameter of the seismic data is a vertical component of particle motion acquired at the respective receiver.

8. (Currently Amended) The method of claim [[7]] 3, wherein the second parameter of the seismic data is a horizontal component of particle motion acquired at the respective receiver.

9. (Currently Amended) The method of claim [[7]] 3, wherein the second parameter of the seismic data is the component of particle motion acquired at the respective receiver in the direction between a source of seismic energy and the respective receiver.

10. (Currently Amended) The method of claim [[1]] 3, wherein at least one of the first

and second parameters of the seismic data is obtained by decomposing the seismic data acquired at the respective receiver.

11. (Currently Amended) The method of claim 1 A method of processing seismic data including corresponding first and second modes of seismic energy, comprising:

- a) processing a trace indicative of a first parameter of the seismic data acquired at a first receiver including at least events corresponding to the first mode with a trace indicative of a second parameter of the seismic data acquired at the first receiver including at least events corresponding to the second mode, wherein step (a) comprises cross-correlating the trace indicative of the first parameter of the seismic data acquired at the first receiver with the trace indicative of the second parameter of the seismic data acquired at the first receiver;
- b) identifying an event in the processed data corresponding to partial mode conversion; and
- c) obtaining information from the amplitude and/or the waveform of the event in the processed data corresponding to partial mode conversion.

12. (Currently Amended) The method of claim 1 A method of processing seismic data including corresponding first and second modes of seismic energy, comprising:

- a) processing a trace indicative of a first parameter of the seismic data acquired at a first receiver including at least events corresponding to the first mode with a trace indicative of a second parameter of the seismic data acquired at the first receiver including at least events corresponding to the second mode, wherein step (a) comprises deconvolving the trace indicative of the first parameter of the seismic data acquired at the first receiver from the trace indicative of the second parameter of the seismic data acquired at the first receiver;
- b) identifying an event in the processed data corresponding to partial mode conversion; and
- c) obtaining information from the amplitude and/or the waveform of the event in the processed data corresponding to partial mode conversion.

13. (Currently Amended) The method of processing the seismic data of claim [[1]] 3, comprising wherein the method of seismic surveying comprises the steps of:

- a) directing seismic energy propagating in a first mode towards a boundary face of a layer of the seabed such that partial mode conversion of the seismic energy into a second mode occurs at the boundary face;
- b) acquiring seismic data including the first and second modes of seismic energy at one or more receivers.

14. (Cancelled)

15. (Currently Amended) The apparatus of claim 14, comprising An apparatus for processing seismic data including corresponding first and second modes of seismic energy, comprising:

- a) means for processing a trace indicative of a first parameter of the seismic data acquired at a first receiver including at least events corresponding to the first mode with a trace indicative of a second parameter of the seismic data acquired at the first receiver including at least events corresponding to the second mode;
- b) means for identifying an event in the processed data corresponding to partial mode conversion;
- c) means for obtaining information from the amplitude and/or the waveform of the event in the processed data corresponding to partial mode conversion; and
- d) normalizing means for normalizing the amplitude in the processed data of the event corresponding to partial mode conversion.

16. (Previously Presented) The apparatus of claim 15, wherein the normalizing means are adapted to normalize the amplitude in the cross-correlated data of the event corresponding to partial mode conversion relative to the amplitude of the cross-correlated data at zero time delay.

17. (Previously Presented) The apparatus of claim 14, comprising An apparatus for processing seismic data including corresponding first and second modes of seismic energy, comprising:

- a) means for processing a trace indicative of a first parameter of the seismic data acquired at a first receiver including at least events corresponding to the first mode with a trace indicative of a second parameter of the seismic data acquired at the first receiver including at least events corresponding to the second mode;
- b) means for identifying an event in the processed data corresponding to partial mode conversion;
- c) means for obtaining information from the amplitude and/or the waveform of the event in the processed data corresponding to partial mode conversion; and
- d) means for normalizing the trace indicative of the second parameter relative to the normalized amplitude of the event corresponding to partial mode conversion.

18. (Currently Amended) The apparatus of claim [[14]] 15, comprising a programmable data processor.

19. (Currently Amended) The apparatus of claim [[18]] 15, comprising a storage medium containing a program for the data processor.